

WHAT IS CLAIMED:

1. A method of superimposing an additional information signal on a video signal, and detecting said additional information from said video signal on which said additional information is superimposed, which comprises:

generating a first spectral spreading code in predetermined intervals synchronized with a sync signal contained in the video signal;

generating inverting and non-inverting spectral spreading codes by inverting the polarity of said first spectral spreading code in said predetermined interval units;

spectrally spreading the additional information signal by said inverting and non-inverting spectral spreading codes to generate a spectrally spread additional information signal;

superimposing the spectrally spread additional information signal on said video signal to generate a video signal with additional information;

generating a second spectral spreading code which is the same as the first spectral spreading code in synchronism with the sync signal contained in said video signal with additional information;

adding or subtracting values of said video signal with

additional information corresponding to chips of said second spectral spreading code according to the values of said chips of said second spectrally spread signal and the polarity of said predetermined intervals to calculate a cumulative value; and

detecting said additional information in said video signal with additional information by determining whether the cumulative value exceeded either a positive or negative threshold value.

2. A method of superimposing an additional information signal as defined in Claim 1, wherein said cumulative value is calculated by adding an addition/subtraction result for intervals of said second spectral spreading code corresponding to inverting intervals of said inverting spectral spreading code, to an addition/subtraction result for non-inverting intervals.

3. A method of superimposing an additional information signal as defined in Claim 1, wherein said first spectral spreading code is generated in intervals equal to one or more vertical periods, or  $1/N$  ( $N \geq 1$ ) vertical periods, of said video signal.

4. A method of superimposing an additional information signal as defined in Claim 1, wherein said first spectral spreading code is generated in intervals equal to

one or more horizontal periods of said video signal.

5. A method of superimposing an additional information signal as defined in Claim 1, wherein said inverted and non-inverted spectrally spread signals are generated by alternately inverting and not inverting said first spectrally spread signal in said predetermined interval units.

6. A method of superimposing an additional information signal as defined in Claim 1, wherein said inverted and non-inverted spectrally spread signals are generated by alternately inverting and not inverting said first spectrally spread signal according to a random number sequence in said predetermined interval units.

7. A method of superimposing an additional information signal, wherein a first spectral spreading code is generated in a predetermined interval synchronized with a sync signal contained in a video signal, inverting and non-inverting spectral spreading codes are generated by inverting or not inverting the polarity of said first spectral spreading code in said predetermined interval units, a spectrally spread additional information signal is generated by spectrally spreading an additional information signal by said inverting and non-inverting spectral spreading codes, and a video signal with additional

information is generated by superimposing said spectrally spread additional information signal on said video signal.

8. A method of superimposing an additional information signal as defined in Claim 7, wherein said first spectral spreading code is generated in intervals equal to one or more vertical periods, or  $1/N$  ( $N \geq 1$ ) vertical periods, of said video signal.

9. A method of superimposing an additional information signal as defined in Claim 7, wherein said first spectral spreading code is generated in intervals equal to one or more horizontal periods of said video signal.

10. A method of superimposing an additional information signal as defined in Claim 7, wherein said inverted and non-inverted spectrally spread signals are generated by alternately inverting and not inverting said first spectrally spread signal in said predetermined interval units.

11. A method of superimposing an additional information signal as defined in Claim 7, wherein said inverted and non-inverted spectrally spread signals are generated by alternately inverting and not inverting said first spectrally spread signal according to a random number sequence in said predetermined interval units.

12. A method of superimposing a spectrally spread

additional information signal on a video signal, and detecting said additional information from said video signal on which said additional information is superimposed, wherein:

a first spectral spreading code is generated in predetermined intervals synchronized with a sync signal contained in the video signal,

inverting and non-inverting spectral spreading codes are generated by inverting the polarity of said first spectral spreading code in said predetermined interval units,

an additional information signal is spectrally spread by said inverted and non-inverted spectral spreading codes to generate a spectrally spread additional information signal,

the spectrally spread additional information signal is superimposed on said video signal to generate a video signal with additional information,

a second spectral spreading code which is the same as the first spectral spreading code is generated in synchronism with the sync signal contained in said video signal with additional information,

values of said video signal with additional information corresponding to chips of said second spectral

spreading code are added or subtracted according to the values of said chips of said second spectrally spread signal and the polarity of said predetermined intervals to calculate a cumulative value, and

said additional information in said video signal with additional information is detected by determining whether the cumulative value exceeded either a positive or negative threshold value.

13. A method of superimposing an additional information signal as defined in Claim 12, wherein said cumulative value is calculated by adding an addition/subtraction result for intervals of said second spectral spreading code corresponding to inverting intervals of said inverting spectral spreading code, to an addition/subtraction result for non-inverting intervals.

14. A device for superimposing an additional information signal on a video signal, and detecting said additional information from said video signal on which said additional information is superimposed, wherein:

a first spectral spreading code is generated in predetermined intervals synchronized with a sync signal contained in the video signal,

inverting and non-inverting spectral spreading codes are generated by inverting the polarity of said first

spectral spreading code in said predetermined interval units,

the additional information signal is spectrally spread by said inverting and non-inverting spectral spreading codes to generate a spectrally spread additional information signal,

the spectrally spread additional information signal is superimposed on said video signal to generate a video signal with additional information,

a second spectral spreading code which is the same as the first spectral spreading code is generated in synchronism with the sync signal contained in said video signal with additional information,

values of said video signal with additional information corresponding to chips of said second spectral spreading code are added or subtracted according to the values of said chips of said second spectrally spread signal and the polarity of said predetermined intervals to calculate a cumulative value,

said additional information in said video signal with additional information is detected by determining whether the cumulative value exceeded either a positive or negative threshold value.

15. A device for superimposing an additional

information signal as defined in Claim 14, wherein said cumulative value is calculated by adding an addition/subtraction result for intervals of said second spectral spreading code corresponding to inverting intervals of said inverted spectral spreading code, to an addition/subtraction result for non-inverting intervals.

16. A device for superimposing an additional information signal as defined in Claim 1, wherein said first spectral spreading code is generated in intervals equal to one or more vertical periods, or  $1/N$  ( $N \geq 1$ ) vertical periods, of said video signal.

17. A device for superimposing an additional information signal as defined in Claim 14, wherein said first spectral spreading code is generated in intervals equal to one or more horizontal periods of said video signal.

18. A device for superimposing an additional information signal as defined in Claim 14, wherein said inverted and non-inverted spectrally spread signals are generated by alternately inverting and not inverting said first spectrally spread signal in said predetermined interval units.

19. A device for superimposing an additional information signal as defined in Claim 14, wherein said inverted and non-inverted spectrally spread signals are



generated by alternately inverting and not inverting said first spectrally spread signal according to a random number sequence in said predetermined interval units.

20. A device for superimposing an additional information signal, wherein a first spectral spreading code is generated in predetermined intervals synchronized with a sync signal contained in a video signal, inverting and non-inverting spectral spreading codes are generated by inverting or not inverting the polarity of said first spectral spreading code in said predetermined interval units, a spectrally spread additional information signal is generated by spectrally spreading an additional information signal by said inverted and non-inverted spectral spreading codes, and a video signal with additional information is generated by superimposing said spectrally spread additional information signal on said video signal.

21. A device for superimposing an additional information signal as defined in Claim 20, wherein said first spectral spreading code is generated in intervals equal to one or more vertical periods, or  $1/N$  ( $N \geq 1$ ) vertical periods, of said video signal.

22. A device for superimposing an additional information signal as defined in Claim 20, wherein said first spectral spreading code is generated in intervals equal to

one or more horizontal periods of said video signal.

23. A device for superimposing an additional information signal as defined in Claim 20, wherein said inverted and non-inverted spectrally spread signals are generated by alternately inverting and not inverting said first spectrally spread signal in said predetermined interval units.

24. A device for superimposing an additional information signal as defined in Claim 20, wherein said inverted and non-inverted spectrally spread signals are generated by alternately inverting and not inverting said first spectrally spread signal according to a random number sequence in said predetermined interval units.

25. A device for superimposing a spectrally spread additional information signal on a video signal, and detecting said additional information from said video signal on which said additional information is superimposed, wherein:

a spectral spreading code is generated in predetermined intervals synchronized with a sync signal contained in the video signal,

inverting and non-inverting spectral spreading codes are generated by inverting the polarity of said spectral spreading code in said predetermined interval units,

an additional information signal is spectrally spread by said inverted and non-inverted spectral spreading codes to generate a spectrally spread additional information signal,

the spectrally spread additional information signal is superimposed on said video signal to generate a video signal with additional information,

a spectral spreading code which is the same as the aforesaid spectral spreading code is generated in synchronism with the sync signal contained in said video signal with additional information,

values of said video signal with additional information corresponding to chips of said spectral spreading code are added or subtracted according to the values of said chips of said spectrally spread signal and the polarity of said predetermined intervals to calculate a cumulative value,

said additional information in said video signal with additional information is detected by determining whether the cumulative value exceeded either a positive or negative threshold value.

26. A method of superimposing an additional information signal as defined in Claim 25, wherein said cumulative value is calculated by adding an

addition/subtraction result for intervals of said second spectral spreading code corresponding to inverting intervals of said inverted spectral spreading code, to an addition/subtraction result for non-inverting intervals.